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10/560,049

12/08/2005

Masahito Inoue

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EXAMINER

ALLEN, CAMERON J

ART UNIT

PAPER NUMBER

1709

MAIL DATE

DELIVERY MODE

08/22/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

### Application No.

10/560,049

### Applicant(s)

INOUE ET AL.

### Examiner

Cameron J. Allen

### Art Unit

1709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/08/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,7,8,10,12-14,16, and 18-22 is/are rejected.
- 7) ☒ Claim(s) 3,4,6,9,11,15 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/08/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1709

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1,2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silinski et al. US 5,102,503, in view of Noboru JP 08-108020 further in view of Hormann

Art Unit: 1709

et al. US 6,482,124.

Regarding claim I, Silinski teaches a contaminated liquid filtration system vehicle which travels to a contaminated liquid collection unit in a factory or the like and treats the contaminated liquid within the collection unit (Column 1 line 18-20), comprising: vehicle driving unit comprising a driving engine and a driving mechanism (figure 1) *The examiner interprets a semi truck to have a vehicle driving unit comprising a driving engine and a driving mechanism*; suction unit for aspirating the contaminated liquid within said contaminated liquid collection unit as liquid to be treated (Figure 3A #64); delivery unit for returning treated liquid which has been treated in said filtration system to the same or a different collection unit in the factory or the like (Column 1 line 54-56); but does not teach a filtration system constituted by a charged filter device and a charged coalescer type oil water separator for filtration treating the aspirated liquid to be treated; electric power supply unit for supplying a driving power source to said filtration system; and control unit for controlling operations of said filtration system, wherein said charged filter device is caused to advance the filtration of impurity particles by applying a voltage between electrodes within said charged filter device using the driving power source supplied from said electric power supply unit, and said charged coalescer type oil water separator is caused to advance oil water separation by applying a voltage between electrodes within the oil water separator using the driving power source supplied from said electric power supply unit. Noboru does teach filtration system constituted by a charged filter device and a charged coalescer type oil water separator for filtration treating the aspirated liquid to be treated (Abstract);; and control unit for

Art Unit: 1709

controlling operations of said filtration system(0052)*The examiner interprets the sensor to be a controlling means`*, wherein said charged filter device is caused to advance the filtration of impurity particles by applying a voltage between electrodes (0032) within said charged filter device using the driving power source supplied from said electric power supply unit, and said charged coalescer type oil water separator is caused to advance oil water separation by applying a voltage between electrodes within the oil water separator using the driving power source supplied from said electric power supply unit.(0054) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Silinski with Noboru to make the treatment apparatus portable, since it has been held that making an old device portable or movable with producing a new and unexpected result involves only routine skill in the art. Combining a known water treatment system with a know water treatment vehicle produces the expected result of a mobile water treating apparatus with the treatment capability of the non-mobile apparatus.

Hormann teaches an electric power supply unit for supplying a driving power source that is capable of providing power to said filtration system. (Hormann Abstract) It would have been obvious to one of ordinary skill in the art at the time of the invention to use the driving engine to produce electricity since it is already know in the art that the driving engine can provide electrical power to an auxiliary system. Combination of these part yield a predictable result of providing electrical power to an auxiliary source

Regarding claim 2, Silinski teaches a contaminated liquid filtration system vehicle which travels to a contaminated liquid collection unit in a factory or the like and treats

Art Unit: 1709

the contaminated liquid within the collection unit (Column 1 line 18-20), comprising: vehicle driving unit comprising a driving engine and a driving mechanism(Figure 1); suction unit for aspirating the contaminated liquid within said contaminated liquid collection unit as liquid to be treated(Figure 3a #64); delivery unit for returning treated liquid which has been treated in said filtration system to the same or a different collection unit in the factory or the like (Column 1 line 54-56) but does not teach a filtration system constituted by a charged filter device, a charged coalescer type oil water separator, and a micro filtration device comprising hollow fiber membranes of an internal pressure circulation system, for filtration treating the aspirated liquid to be treated; electric power supply unit for supplying a driving power source to said filtration system; and control unit for controlling operations of said filtration system, wherein said charged filter device is caused to advance the filtration of impurity particles by applying a voltage between electrodes within said charged filter device using the driving power source supplied from said electric power supply unit, said charged coalescer type oil water separator is caused to advance oil water separation by applying a voltage between electrodes within the oil water separator using the driving power source supplied from said electric power supply unit, and said micro filtration device comprises a primary side circulation path for circulating the liquid to be treated and a discharge path which is bifurcated therefrom to discharge concentrated liquid, an open/close valve being provided on said discharge path and said control unit controlling the discharge of said concentrated liquid by opening said open/close valve at predetermined time intervals set in accordance with the type of the liquid to be treated; electric power supply

Art Unit: 1709

unit for supplying a driving power source to said filtration system (column 4 line 48-50).

Noboru does teach a filtration system constituted by a charged filter device(0032), a charged coalescer type oil water separator(0054), and a micro filtration device comprising hollow fiber membranes of an internal pressure circulation system(Noboru 0066), for filtration treating the aspirated liquid to be treated; and control unit for controlling operations of said filtration system, wherein said charged filter device is caused to advance the filtration of impurity particles by applying a voltage between electrodes (Noboru 0052) within said charged filter device, said charged coalescer type oil water separator is caused to advance oil water separation by applying a voltage between electrodes within the oil water separator, and said micro filtration device comprises a primary side circulation path for circulating the liquid to be treated and a discharge path which is bifurcated therefrom to discharge concentrated liquid (Silinski 0055), an open/close valve being provided on said discharge path and said control unit controlling the discharge of said concentrated liquid by opening said open/close valve at predetermined time intervals set in accordance with the type of the liquid to be treated. (Silinski 0060 automatic valve 7) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Silinski with Noboru to make the treatment apparatus portable, since it has been held that making an old device portable or movable with producing a new and unexpected result involves only routine skill in the art. Combining a known water treatment system with a know water treatment vehicle produces the expected result of a mobile water treating apparatus with the treatment capability of the non-mobile apparatus.

Art Unit: 1709

Hormann teaches using the driving power source supplied from said electric power supply unit to power all auxiliary apparatus and devices. (Hormann Abstract) It would have been obvious to one of ordinary skill in the art at the time of the invention to use the driving engine to produce electricity since it is already known in the art that the driving engine can provide electrical power to an auxiliary system. Combination of these parts yields a predictable result of providing electrical power to an auxiliary source.

5. Claims 5,7, 10,13, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silinski as applied to claims 1 and 2 above, in view of Noboru, in view of Hormann, and in further view of Tarou JP 07-280696.

Regarding claim 5, Silinski in view of Noboru in view of Hormann teaches the contaminated liquid filtration system vehicle according to claim 1, but does not teach comprising a sensor for detecting irregularities in said open/close valve and warning unit for outputting a warning signal on the basis of the irregularities in the open/close valve detected by said sensor. Tarou does teach comprising a sensor for detecting irregularities in said open/close valve and warning unit for outputting a warning signal on the basis of the irregularities in the open/close valve detected by said sensor. (Tarou Abstract) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Silinski in view of Noboru in view of Hormann with Tarou since combining elements as claimed by known methods with no change in their respective function, and the combination yielded predictable results is obvious to one skilled in the art.

Regarding claim 7, Silinski in view of Noboru in view of Hormann teaches the



Art Unit: 1709

contaminated liquid filtration system vehicle according to claim 1, but does not teach comprising a sensor for detecting irregularities in the pump of said micro filtration device and warning unit for making a warning signal on the basis of irregularities in the pump detected by said sensor. Tarou does teach comprising a sensor for detecting irregularities in the pump of said micro filtration device and warning unit for making a warning signal on the basis of irregularities in the pump detected by said sensor. (Tarou Abstract) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Silinski in view of Noboru in view of Hormann with Tarou since combining elements as claimed by known methods with no change in their respective function, and the combination yielded predictable results is obvious to one skilled in the art.

Regarding claim 10, Silinski in view of Noboru in view of Hormann teaches the contaminated liquid filtration system vehicle according to claim 1, but does not teach comprising an image capturing device to capture images of constitutional elements such as the piping of the filtration system, and a memory device for storing and managing image information captured by said image capturing device. Tarou (JP 07-280696) does teach an image capturing device to capture images of constitutional elements such as the piping of the filtration system, and a memory device for storing and managing image information captured by said image capturing device. (Tarou Abstract) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Silinski in view of Noboru in view of Hormann with Tarou since combining

Art Unit: 1709

elements as claimed by known methods with no change in their respective function, and the combination yielded predictable results is obvious to one skilled in the art.

Regarding claim 13, Silinski in view of Noboru in view of Hormann teaches the contaminated liquid filtration system vehicle according to claim 2, but does not teach comprising a sensor for detecting irregularities in said open/close valve and warning unit for outputting a warning signal on the basis of the irregularities in the open/close valve detected by said sensor. Tarou does teach comprising a sensor for detecting irregularities in said open/close valve and warning unit for outputting a warning signal on the basis of the irregularities in the open/close valve detected by said sensor. (Tarou Abstract) The examiner interprets the alarm to be a warning signal. The examiner interprets irregularities to be leaks. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Silinski in view of Noboru in view of Hormann with Tarou since combining elements as claimed by known methods with no change in their respective function, and the combination yielded predictable results is obvious to one skilled in the art

Regarding claim 14, Silinski in view of Noboru in view of Hormann teaches the contaminated liquid filtration system vehicle according to claim 2, but does not teach comprising a sensor for detecting irregularities in the pump of said micro filtration device and warning unit for making a warning signal on the basis of irregularities in the pump detected by said sensor. Tarou does teach a sensor for detecting irregularities in the pump of said micro filtration device and warning unit for making a warning signal on the basis of irregularities in the pump detected by said sensor. (Tarou Abstract) The

Art Unit: 1709

examiner interprets the alarm to be a warning signal. The examiner interprets irregularities to be leaks. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Silinski in view of Noboru in view of Hormann with Tarou since combining elements as claimed by known methods with no change in their respective function, and the combination yielded predictable results is obvious to one skilled in the art.

Regarding claim 16, Silinski in view of Noboru in view of Hormann teaches the contaminated liquid filtration system vehicle according to claim 2, but does not teach comprising an image capturing device to capture images of constitutional elements such as the piping of the filtration system, and a memory device for storing and managing image information captured by said image capturing device. Tarou does teach comprising an image capturing device to capture images of constitutional elements such as the piping of the filtration system, and a memory device for storing and managing image information captured by said image capturing device. (Tarou Abstract) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Silinski in view of Noboru in view of Hormann with Tarou since combining elements as claimed by known methods with no change in their respective function, and the combination yielded predictable results is obvious to one skilled in the art.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silinski, Noboru, and Hormann as applied to claims 1 and 2 above, and further in view of Kulbeth US 6,808,626.

Regarding claim 12, Silinski in view of Noboru in view of Hormann teaches the

Art Unit: 1709

contaminated liquid filtration system vehicle according to claim 1, but does not teach wherein said filtration system is installed on a load-carrying platform which is removably connected to the vehicle main body, and said filtration system is constituted so as to be detachable with a cargo compartment. Kulbeth (US6,808,626) does teach wherein said filtration system is installed on a load-carrying platform which is removably connected to the vehicle main body, and said filtration system is constituted so as to be detachable with a cargo compartment. The examiner interprets the space above #108 in figure 2 to be capable of carrying cargo. (Kulbeth Column3 1-5) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Silinski in view of Noboru in view of Hormann with Kulbeth, sine they both teach mobile apparatus for fluid treatment. Modifying Silinski in view of Noboru in view of Hormann with Kulbeth requires only combining the elements as claimed by known methods with no change in their respective functions and the combination yield predictable results to one of ordinary skill in the art at the time of the invention.

7. Regarding Claim 18, Silinski in view of Noboru in view of Hormann teaches the contaminated liquid filtration system vehicle according to claim 2, but does not teach wherein said filtration system is installed on a load-carrying platform which is removably connected to the vehicle main body, and said filtration system is constituted so as to be detachable with a cargo compartment. The examiner interprets the space above #108 in figure 2 to be capable of carrying cargo. (Kulbeth Column3 1-5) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Silinski in view of Noboru in view of Hormann with Kulbeth, sine they both teach mobile

Art Unit: 1709

apparatus for fluid treatment. Modifying Silinski in view of Noboru in view of Hormann with Kulbeth requires only combining the elements as claimed by known methods with no change in their respective functions and the combination yield predictable results to one of ordinary skill in the art at the time of the invention.

Claims 8, 19, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silinski, Noboru, and Hormann as applied to claims 1 and 2 above, and further in view of Yu et al. US 4,411,785.

Regarding claims 8, Silinski et al. teaches a contaminated liquid filtration system vehicle which travels to a contaminated liquid collection unit in a factory or the like and treats the contaminated liquid within the collection unit, comprising: (Silinski Column 1 line 5-8)

a vehicle driving unit comprising a driving engine and a driving mechanism; (Figure 1)

*The examiner interprets the semi to have an engine.*

a suction unit for aspirating the contaminated liquid within said contaminated liquid collection unit as liquid to be treated; (Figure 3a #64)

control unit for controlling operations of said filtration system (Figure 7a #82, 86, 90, 92)

a delivery unit for returning treated liquid which has been treated in said filtration system to the same or a different collection unit in the factory or the like; (Column 4 line 40-46)

but does not teach:

a filtration system constituted by a charged filter device, a charged coalescer type oil water separator, and a micro filtration device comprising hollow fiber membranes of an internal pressure circulation system, for filtration treating the aspirated liquid to be

Art Unit: 1709

treated;

an electric power supply unit for supplying a driving power source to said filtration system;

wherein said charged filter device is caused to advance the filtration of impurity particles by applying a voltage between electrodes within said charged filter device using the driving power source supplied from said electric power supply unit, said charged coalescer type oil water separator is caused to advance oil water separation by applying a voltage between electrodes within the oil water separator using the driving power source supplied from said electric power supply unit, said micro filtration device comprises a primary side circulation path for circulating the liquid to be treated and a discharge path which is bifurcated therefrom to discharge concentrated liquid, an open/close valve being provided on said discharge path and said control unit controlling the discharge of said concentrated liquid by opening said open/close valve at predetermined time intervals set in accordance with the type of the liquid to be treated, and air supply pipes connected to said charged filter device, oil water separator, and micro filtration device to drain each of said devices are disposed in a single location, open/close valves being installed side by side on each of said pipes.

Noboru does teach: a filtration system constituted by a charged filter device(Noboru 0059), a charged coalescer type oil water separator(0059), and a micro filtration device comprising fiber membranes of an internal pressure circulation system, for filtration treating the aspirated liquid to be treated;(0066)

Art Unit: 1709

wherein said charged filter device is caused to advance the filtration of impurity particles by applying a voltage between electrodes within said charged filter device using the driving power source supplied from said electric power supply unit, said charged coalescer type oil water separator is caused to advance oil water separation by applying a voltage between electrodes within the oil water separator. Hormann et al. does teach an electric power supply unit for supplying a driving power source to a system. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the driving engine to produce electricity since it is already known in the art that the driving engine can provide electrical power to an auxiliary system. Combination of these parts yields a predictable result of providing electrical power to an auxiliary source.

8. Yu et al teaches micro filtration device comprising hollow fiber membranes of an internal pressure circulation system. The examiner interprets a pump to move fluid through out the system said pump provides a force per unit area thereby placing the system under pressure (Abstract), air supply pipes connected to said charged filter device, oil water separator, and micro filtration (Column 11 line 25) device to drain each of said devices are disposed in a single location, open/close valves being installed side by side on each of said pipes. It would have been obvious to one of ordinary skill at the time of the invention to use valves in a user friendly location, since water control is a necessary part of the operation and valves are a known method of water control. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fibers in the teachings of Noboru with the hollow fibers in Yu et al since it is known in

Art Unit: 1709

the art that both types of fibers are capable of treating wastewater.

Regarding claim 22, Silinski in view of Noboru in view of Hormann and in further view of Yu et al teaches the contaminated liquid filtration system vehicle according to claim 8, but does not teach wherein said filtration system is installed on a load-carrying platform which is removably connected to the vehicle main body, and said filtration system is constituted so as to be detachable with a cargo compartment. The examiner interprets the space above #108 in figure 2 to be capable of carrying cargo. (Kulbeth Column3 1-5) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Silinski in view of Noboru in view of Hormann with Kulbeth, since they both teach mobile apparatus for fluid treatment. Modifying Silinski in view of Noboru in view of Hormann with Kulbeth requires only combining the elements as claimed by known methods with no change in their respective functions and the combination yield predictable results to one of ordinary skill in the art at the time of the invention.

Regarding claim 19, Silinski in view of Noboru in view of Hormann and in further view of Yu et al teaches the contaminated liquid filtration system vehicle according to claim 8, wherein a suction pipe for aspirating the contaminated liquid in the contaminated liquid collection unit is provided as said suction unit, but does not teach an electromagnetic valve is provided at a point on the channel of said suction pipe for opening and closing said channel, and said control unit prevent improper use by closing said electromagnetic valve during said draining. It would have been obvious to one of ordinary skill in the art at the time of the invention to use and electromagnetic valve or



Art Unit: 1709

any other type of valve because the two valves are equivalent and would be within the level of ordinary skill to substitute one with the other.

Regarding claim 20, Silinski in view of Noboru in view of Hormann and in further view of Yu et al teaches the contaminated liquid filtration system vehicle according to claim 8, but does not teach comprising an image capturing device to capture images of constitutional elements such as the piping of the filtration system, and a memory device for storing and managing image information captured by said image capturing device. Tarou does teach an image capturing device to capture images of constitutional elements such as the piping of the filtration system, and a memory device for storing and managing image information captured by said image capturing device. (Abstract) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Silinski in view of Noboru in view of Hormann in view of Yu with Tarou since combining elements as claimed by known methods with no change in their respective function, and the combination yielded predictable results is obvious to one skilled in the art.

Regarding claim 21, Silinski in view of Noboru in view of Hormann and in further view of Yu et al teaches the contaminated liquid filtration system vehicle according to claim 8, but does not teach comprising a power generating device serving as said electric power supply unit which is driven by the driving engine constituting said vehicle driving unit. Hormann et al does teach a power-generating device serving as said electric power supply unit which is driven by the driving engine constituting said vehicle driving unit. (Abstract) It would have been obvious to one of ordinary skill in the art at

Art Unit: 1709

the time of the invention to use the driving engine to produce electricity since it is already known in the art that the driving engine can provide electrical power to an auxiliary system. Combination of these parts yields a predictable result of providing electrical power to an auxiliary source

***Allowable Subject Matter***

9. Claims 3,4,6,9,11,15, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is an examiner's statement of reasons for allowance: The prior art does not teach a filtration system is constituted so as to be detachable with a cargo compartment or of a control unit controlling the discharge of said concentrated liquid by opening the open/close valve when the concentration of the concentrated liquid in the primary side circulation path, which is detected by said concentration detection unit, exceeds a predetermined value. The prior art also does not teach control unit output a warning signal such as a light or sound for advancing opening of said open/close valve following the elapse of a predetermined time period set in accordance with the type of the liquid to be treated.

Any comments considered necessary by applicant must be submitted no later than the

Art Unit: 1709

the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cameron J. Allen whose telephone number is 571-2703164. The examiner can normally be reached on Mon-Fri 8-5 alternate Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJA

*Melvin Mayes*  
*[Signature]*  
Primary Examiner  
AU1734